

**Serial No.:** 09/557,577  
**Filed:** April 21, 2000

**IN THE SPECIFICATION:**

Please replace the paragraph starting on page 117, line 9, with the following rewritten paragraph:

B1  
-Using the above techniques, and standard nucleic acid synthesis, the uridine with the phenyl-acetylene conductive polymer of Example 1 was incorporated at the 3' position to form the following nucleic acid: (SEQ ID NO: 1) ACCATGGACTCAGCU-conductive polymer of Example 1 (hereinafter "wire-1"). -

Please replace the paragraph starting on page 120, line 17, with the following rewritten paragraph:

B2  
-Hybridization efficiency was determined using  $^{32}\text{P}$  complementary and noncomplementary 15 mers corresponding to the wire-1 sequence (SEQ ID NO: 1). The electrodes were incubated with 50 microliters of each of the labelled non-complementary (herein "A5") or complementary (herein "S5") target sequences applied over the entire electrode in 1XSSC as depicted in Table 1. The electrodes were then incubated for 1-2 hours at room temperature in a moist chamber, and rinsed as described above. The amount of radiolabelled DNA was measured for each electrode in a scintillation counter, and the electrodes were dried and exposed to X-ray film for 4 hours.-

Please replace the paragraph starting on page 124, line 11, with the following rewritten paragraph:

B3  
-The following nucleic acid composition was made using the techniques above: (SEQ ID NO: 2) 5'-ACCATGGAC[UBF]CAGCU-conductive polymer (Structure 5 type, as outlined above) herein "wire-3", with UBF made as described above. Thus, the second electron transfer moiety, ferrocene, is on the sixth base from the conductive oligomer.-

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Please replace the paragraph starting on page 125, line 19, with the following rewritten paragraph:

B4  
- Sample 1, labeled herein as "Fc-alkane", contained a mixed monolayer of insulator-2 and insulator-1. Sample 2, labeled herein as "Fc-amido-alkane", contained a mixed monolayer of insulator-2 and a derivative of insulator-1 which has an amido attachment of the ferrocene to the alkane. Sample 3, labeled herein as "Fc-wire", contained a mixed monolayer of insulator-2 and wire-2. Sample 4 was the same as Sample 3, with the exception that a new in situ deprotection step was used, described below. Sample 5, labeled herein as "ssDNA" (AGCTGAGTCCA(UBF)GGU-conductive oligomer) (SEQ ID NO: 3), contained a mixed monolayer of insulator-2 and wire-3. Sample 6, labeled herein as "dsDNA", contained a mixed monolayer of insulator-2 and wire-3, wherein the complement of wire-3 was hybridized to form a double stranded wire-3. Sample 7 was a solution of ferrocene in solution. As is shown herein, the rate of electron transfer, from fast to slower, is as follows: Sample 3 > Sample 6 > Sample 1 > Sample 2 > Sample 5. Generally, Sample 1 models ssDNA, and Sample 3 models dsDNA.-

On ~~page~~ 135, immediately preceding the claims, insert the enclosed text entitled "SEQUENCE LISTING".

REMARKS

Attached hereto is a marked-up version of the changes made to the specification by the current amendment. The attached page is captioned "Version with markings to show changes made."

These amendments are made in adherence with 37 C.F.R. § 1.821-1.825. This amendment is accompanied by a floppy disc containing the above named sequence, SEQUENCE ID NUMBERS